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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/554,119

10/18/2006

Ole-Bendt Rasmussen

50000-OR04

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23873 7590 07/06/2010  
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EXAMINER

LOPEZ, RICARDO E.

ART UNIT

PAPER NUMBER

1786

MAIL DATE

DELIVERY MODE

07/06/2010

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/554,119	<b>Applicant(s)</b> RASMUSSEN, OLE-BENDT	
	<b>Examiner</b> RICARDO E. LOPEZ	<b>Art Unit</b> 1786	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 05 May 2010.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-97 is/are pending in the application.
- 4a) Of the above claim(s) 1-48 and 67-95 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 49-66 and 96-97 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

### **DETAILED ACTION**

1. Applicant's Amendments and Accompanying Remarks filed on May 05, 2010 has been entered and carefully considered. Claims 1 – 95 are still pending in this application. Claims 1 – 48 and 67 – 95 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim.

In view of Applicant's argument, the Examiner has withdrawn the 35 U.S.C. 112 second paragraph rejection of claims 49 - 55.

After careful consideration of Applicant's Remarks and amendments, the Examiner has maintained the rejection of claims 49 – 66 and 96 - 97 over Momose, Gash and Desarzens et al. as detailed in the Office Action dated January 05, 2010.

### ***Election/Restrictions***

2. Affirmation of Applicant's election with traverse of invention Group I, claims 49 – 66 and 96 – 97, in the reply filed on May 05, 2010 is acknowledged. The traversal is on the ground(s) that the apparatuses, methods and films are directly related and inextricably interwoven. The apparatuses are specifically designed to produce the films of this invention. Likewise, the methods are specifically designed to produce the films of this invention. The unique structures of the apparatuses and the unique features of the methods are necessary for producing the unique features of the film. Additionally, the unique features of the films require the unique features of the apparatuses and the

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methods. Unity of invention under the PCT are satisfied by the unique attributes of each of the three groups, films, apparatuses, and methods and the fact, that the apparatus is specifically designed to produce the film and the methods are specifically designed to produce the film.

In response to arguments, the Examiner respectfully submits that as set forth in the Office Action dated January 05, 2010, the inventions listed as Groups 1, 2 and 3, do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, they lack the same or corresponding special technical features for the following reasons: unity of invention is present a priori since there are common technical features to the three Groups of inventions, However, the coextrusion of oriented films comprising two polymers with a phase separation characteristic is taught by Momose US Patent No 5,019,439 (Abstract). Thus, the corresponding technical features are not the inventors own contribution to the art. Therefore, there is no special corresponding special technical feature or unity of invention between the claimed Groups. Restriction is appropriate.

The requirement is still deemed proper and is therefore made FINAL.

### ***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 56 – 59 are rejected under 35 U.S.C. 102 (b) as being unpatentable over Momose US Patent No 5,019,439.

5. Considering claims 56 – 59, Momose teaches an extruded oriented film comprising a layer of alloy of two polymers, the second resin corresponding to applicants P1 and the first resin corresponding to applicants P2. The first resin may be, for example, a polyolefin such as polyethylene or polypropylene, polystyrene, a polyacrylonitrile, polyester, a polycarbonate, poly vinyl chloride, or a modified resin thereof. The second resin may be, for example, a polyamide, a saponified ethylene vinyl acetate copolymer, an ethylene vinyl alcohol copolymer EVOH (Col. 3, lines 42 -48); both resins are partially crystalline under 100 °C (i.e. nylon 6 P1 and polyethylene P2, as described in example 2); wherein P2 in its unoriented state at 20 ° C exhibits a coefficient or modulus of elasticity more than 15 % lower than P1, and the alloy comprises a dispersion of microscopically fine fibrils (tapes) of P1 surrounded by P2. These fibrils or tapes extend each mainly in one direction and has width and thickness lower than 5 µm; said fibrils are flat and substantially parallel with the plane of the film, with thickness preferably in the range 0.05 to 10 µm and width more than five times the thickness (Col. 3, lines 1-21). Furthermore, that as result of the above described construction; the thermoplastic resin film can exhibit significantly improvement gas barrier property as compared with a known film having dispersed therein fine particles of

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the second thermoplastic resin (Col. 3, lines 23 – 28). Moreover, Momose teaches in the embodiment illustrated in Fig. 1 that the fibrils or tapes of resin P1 show at least 4 die lines. Thus anticipating all limitations in the subject claims.

### ***Claim Rejections - 35 USC § 103***

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 49 – 55 and 96 – 97 are rejected under 35 U.S.C. 103(a) as being unpatentable over Momose US Patent No 5,019,439 in view of Gash US Patent No 4,243,463.

8. Considering claims 49 – 55 and 96 - 97, Momose teaches an extruded oriented film comprising a layer of alloy of two polymers, the second resin corresponding to applicants P1 and the first resin corresponding to applicants P2. The first resin may be, for example, a polyolefin such as polyethylene or polypropylene, polystyrene, a polyacrylonitrile, polyester, a polycarbonate, poly vinyl chloride, or a modified resin thereof. The second resin may be, for example, a polyamide, a saponified ethylene vinyl acetate copolymer, an ethylene vinyl alcohol copolymer EVOH (Col. 3, lines 42 -48);

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both resins are partially crystalline under 100 °C (i.e. nylon 6 P1 and polyethylene P2, as described in example 2); wherein P2 in its unoriented state at 20 ° C exhibits a coefficient or modulus of elasticity more than 15 % lower than P1, and the alloy comprises a dispersion of microscopically fine fibrils (tapes) of P1 surrounded by P2. Referring first to FIG. 1, designated generally as 1 is a thermoplastic film according to the present invention. The film 1 is composed of a matrix film 2 formed of a first thermoplastic resin, and a plurality of substantially continuous tapes 3 formed of a second thermoplastic resin exhibiting better gas barrier property (lower gas-permeability) than that of the first resin and generally substantially uniformly dispersed within the matrix 2. The plane of each of the tapes 3 is substantially parallel with the plane of the matrix 2. Each of the tapes 3 generally has a width of 75 µm or more. The thickness of the tapes 3 is preferably in the range of 0.05 to 10 µm, more preferably 0.1 to 5 µm. These fibrils or tapes extend each mainly in one direction and has width and thickness lower than 5 µm; said fibrils are flat and substantially parallel with the plane of the film (Col. 3, lines 1-21). Therefore, the tapes or fibrils taught by Momose anticipate both dimensional limitations for said fibrils in the instant claims, i.e. “thickness generally around or lower than 1 µm, and width at least 5 times the thickness”.

Regarding the limitation for the P1 fibrils to exhibit “locations of rupture”, Momose teaches in the embodiment illustrated in Fig. 1 that fibrils or tapes of polymer P1 are discontinuous, thus meeting the limitation in the subject claims.

Momose does not specifically recognize that the composite be a cross lamination of the polymeric films.

Gash teaches that cross laminates of monoaxially oriented, thermoplastic polymeric films have a number of advantageous properties; in particular they have much better tear resistance than a single play film of the same overall thickness and of the same polymer which has been biaxially oriented (Col. 1, lines 24 – 29).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to cross laminate the extruded oriented films of Momose when it is desired to provide films with improved tear resistance.

9. Claims 60 – 66 are rejected under 35 U. S. C. 103(a) as being unpatentable over Momose US Patent No 5,019,439 in view of Desarzens et al. US Patent No 6, 326,411 B1.

10. Considering claims 60 – 66, Momose teaches an extruded oriented film comprising a layer of alloy of two polymers, the second resin corresponding to applicants P1 and the first resin corresponding to applicants P2. The first resin may be, for example, a polyolefin such as polyethylene or polypropylene, polystyrene, a polyacrylonitrile, polyester, a polycarbonate, poly vinyl chloride, or a modified resin thereof. The second resin may be, for example, a polyamide, a saponified ethylene vinyl acetate copolymer, an ethylene vinyl alcohol copolymer EVOH (Col. 3, lines 42 -48); both resins are partially crystalline under 100 °C (i.e. nylon 6 P1 and polyethylene P2, as described in example 2); wherein P2 in its unoriented state at 20 ° C exhibits a coefficient or modulus of elasticity more than 15 % lower than P1, and the alloy



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comprises a dispersion of microscopically fine fibrils (tapes) of P1 surrounded by P2.

These fibrils or tapes extend each mainly in one direction and has width and thickness lower than 5  $\mu\text{m}$ ; said fibrils are flat and substantially parallel with the plane of the film, with thickness preferably in the range 0.05 to 10  $\mu\text{m}$  and width more than five times the thickness (Col. 3, lines 1-21).

Momose does not specifically recognize that the extruded oriented film be a cellular expanded film.

Desarzens et al. teaches an extrusion composition comprising a polymer, an adsorption agent including an expansion agent and a nucleating agent (Abstract). Furthermore, Desarzens et al. also teaches that by means of polymer extrusion technology, cellular structure materials of very variable apparent densities can be produced (Col. 1, lines 16 – 19).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to incorporate expanding agents to Momose's polymeric composition when it is desired to obtain films having apparent density lower than the density of the unexpanded films. The weight proportion of P1 to P2 would be a result effective variable related to the final application of the thermoplastic polymeric cellular expanded film.

***Response to Arguments***

11. Regarding Applicant's arguments with respect to rejection of claims 49 – 66 and 96 – 97, these have been considered but are found to be not persuasive for the following reasons.

Applicant traverses the rejections in previous Office Action on the basis that Momose does not disclose the "limitation that average or mean of the width and thickness of the fibril be less than or equal to about 5  $\mu\text{m}$ ", Momose cannot anticipate the claims of this invention. Applicant, therefore, respectfully requests withdrawal of this rejection.

12. In response to arguments, the Examiner respectfully submits that none of the claims under examination comprise the above quoted limitation. The dimensional limitations for said fibrils in the instant claims, recite "thickness generally around or lower than 1  $\mu\text{m}$ , and width at least 5 times the thickness". The Examiner respectfully directs Applicant's attention to the disclosure of Momose in Col. 3, lines 3 – 11, Each of the tapes 3 generally has a width of 75  $\mu\text{m}$  or more. The thickness of the tapes 3 is preferably in the range of 0.05 to 10  $\mu\text{m}$ , more preferably 0.1 to 5  $\mu\text{m}$ . Therefore, the tapes or fibrils taught by Momose anticipate both dimensional limitations for Applicant's fibrils in the instant claims. Furthermore, the combinations Momose Gash and Momose Desarzens render obvious all other limitations in this application as set forth above in the 103 rejection of claims 49 – 55 and 96 – 97; and 60 – 66 respectively.

***Conclusion***

13. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to RICARDO E. LOPEZ whose telephone number is (571)-270-1150. The examiner can normally be reached on Monday to Thursday 8:00 am-5:30pm EST, and every other Friday from 8:00 am to 4:30 pm..

15. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, D. Lawrence Tarazano can be reached on (571)-272-1515. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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16. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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June 30, 2010